CLAIMS

The invention claimed is:

1. A circuit for producing a reference voltage between a first node and a second node, comprising:

a resistive element and a junction device coupled in series between the first node and the second node, wherein the junction device includes a junction and has a negative temperature coefficient; and

a first and a second current sources to route respectively a first and a second bias currents to the resistive element and to the junction device such that a resulting first branch current through the resistive element is unequal to a resulting second branch current through the junction device.

2. The circuit of claim 1, wherein

the first bias current has a different manufacturing process variation dependence than the second bias current.

3. The circuit of claim 1, wherein

the second bias current is larger than the first bias current.

4. The circuit of claim 1, wherein

the first current source is adapted to transmit the first bias current through the resistive element, and

the second current source is adapted to transmit the second bias current through the junction device for biasing the junction, without transmitting the second bias current through the resistive element.

5. The circuit of claim 4,

wherein the first bias current reaches the intermediate node after the resistive element and before the junction device, and

further comprising a third current source to extract a drained current from the intermediate node.

6. The circuit of claim 5, wherein

the drained current approximately equals the first bias current, and has approximately the same manufacturing process variation dependence as the first bias current.

7. The circuit of claim 5, further comprising:

a current mirror structure for controlling concurrently the first current source and the third current source.

8. The circuit of claim 1, further comprising:

a current source controller to control the second current source, wherein the current source controller is controlled by the reference voltage.

9. The circuit of claim 8, wherein

a feedback loop is defined from the current source controller being controlled by the control voltage and in turn controlling the second current source, and

the current source controller controls the second current source such that the feedback loop has an open loop gain of less than one.

10. A device for producing a reference voltage between a first node and a second node, comprising:

means for forcing a first branch current through a resistive element to generate a resistive voltage drop between the second node and an intermediate node; and

means for forcing a second branch current through a junction device that includes a junction and has a negative temperature coefficient to generate a junction voltage drop between the intermediate node and the first node,

wherein the second branch current is unequal to the first branch current.

11. The device of claim 10, wherein

the first branch current has a different manufacturing process variation dependence than the second branch current.

12. The device of claim 10, wherein

the second branch current is larger than the first branch current.

13. The device of claim 10, further comprising:

means for draining from the intermediate node a drained current that approximately equals the first branch current, and has approximately the same manufacturing process variation dependence as the first branch current.

14. A method comprising:

forcing a first branch current through a resistive element to generate a resistive voltage drop;

forcing a second branch current through a junction device that includes a junction and has a negative temperature coefficient to generate a junction voltage drop, wherein the second branch current is different from the first branch current; and

adding the resistive voltage drop to the junction voltage drop to generate a reference voltage.

15. The method of claim 14, wherein

the first branch current has a different manufacturing process variation dependence than the second branch current.

16. The method of claim 14, wherein

the second branch current is larger than the first branch current.

17. The method of claim 14, further comprising:

combining the first branch current with a bias current to generate the second branch current.

18. The method of claim 17, further comprising:
controlling the bias current by the reference voltage.

19. The method of claim 17, further comprising:
draining at least some of the first branch current.

20. The method of claim 19, wherein
the drained current approximately equals the first branch current, and has approximately the same manufacturing process variation dependence as the first branch current.